

Buddhist Psychology

A short history

Summarized from: “Consciousness and meditation: A random survey of recent developments”
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by Piya Tan ©2006

1 The appeal of early Buddhism

In this paper, we will examine the current state of studies and understanding of consciousness, meditation and Buddhism, as they grow more closely related. **Susan Blackmore** provides a good introduction here (from her chapter on “Buddhism and consciousness”):

It may seem strange to end this book [*Consciousness: An introduction*] with what looks like a religious doctrine, when ancient dogma or doctrine cannot be what we are after. It is true that, like all religions, Buddhism has accumulated a vast superstructure of memes, including texts, rituals, beliefs, beautiful buildings, sculptures and statues, music and liturgies. Yet what the Buddha saw is not a meme. It cannot be spoken of directly, and can only be transmitted by tricks of pointing or showing, or doing something to provoke another mind into letting go. This is known in Zen as “transmission outside the scriptures.”

(Blackmore 2003:402)

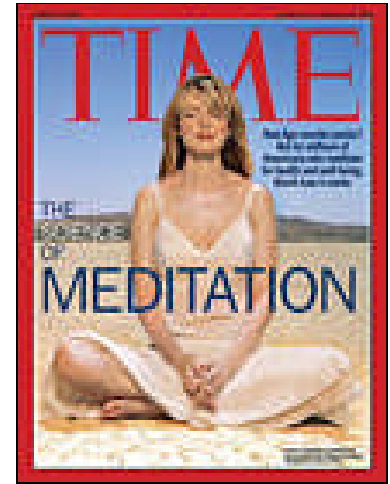


Fig 1 Time Magazine,
4 Aug 03, Vol 162 no 5

The uniqueness of early Buddhism, not only amongst religions, indeed, in practically all fields of human knowledge (until now), is that it teaches no creator-god, no need for reliance of a higher power, and no notion of an abiding soul. In fact, Buddhists are not required to *believe* anything, but to examine life for themselves in such a way that they would *wake up*.

The heart of early Buddhism is crystallized in the four noble truths, best translated into English in this way:

- | | |
|---|--|
| (1) <i>dukkha ariya,sacca</i> | the noble truth that is suffering, |
| (2) <i>dukkha,samudaya ariya,sacca</i> | the noble truth that is the arising of suffering, |
| (3) <i>dukkha,nirodha ariya,sacca</i> | the noble truth that is the ending of suffering, and |
| (4) <i>dukkha,nirodha,gāminī,paṭipadā ariya,sacca</i> | the noble truth that is the path to the ending of suffering. |
- (S 56.11/5:420-424) = SD 1.1

Buddhist practitioners, such as **Stephen Batchelor**, have pointed out that these truths are not propositions to be believed, for if they were, Buddhism would be just another religion like any other. Instead, they are truths to *be acted upon*.¹ Batchelor also speaks of how alienated self-centredness is often confused with individual freedom, and that

The aim of dharma practice is to free ourselves from this illusion of freedom. This is achieved by understanding the anguish that accompanies such delusive independence, and letting go of the confusion and craving that hold it in place. (1997:95)

Buddhism is, above all, a method of inquiry into self-discovery: it is an invitation to live an examined life. This inquiry, properly carried out through mindfulness practice and meditation, would reveal the impermanence, unsatisfactoriness, the illusory nature of the self, and the emptiness of all phenomena, thus ending suffering.

¹ On the twelve ways of acting upon these truths, see **Dhamma,cakka-p,pavattana S** (S 56.11.9-12/5:422) = SD 1.1. See S Batchelor, *Buddhism Without Beliefs*, 1997:4 f.

This is probably one of the main reasons why many psychologists have turned to Buddhism in their efforts to understand the nature of the mind and consciousness.

Another important reason for scholars today find in Buddhism a complementary ally in their quest to understand the human mind is where Buddhism offers effective techniques to create altered states of consciousness while the West has the technological means to study them. Furthermore, Buddhism has a rich vocabulary of the mind, which Western psychology, philosophy and related fields find very operational.

Western academia's discovery of Buddhist psychology began over a century ago, and it to this fascinating history that we now turn to.

2 William James

Those who relate the history of psychology and Buddhism would often begin with **William James** (1842-1910), and for good reason, and we shall discuss it here. James was a pioneering American psychologist and philosopher, who wrote influential books on the young science of psychology, educational psychology, the psychology of religious experience, and the philosophy of pragmatism.

In the twelve years that James took to write *The Principles of Psychology* (1890), he became interested in the existence of subconscious processes, and was instrumental in the founding of the American Society for Psychical Research in 1884. It was research into the subconscious that led James to the formation of the image of consciousness as a stream. Probably, he also drew on Buddhist teachings, as the term “stream of consciousness” is a literal English translation of the Pali *viññāṇa, sota*. He uses the phrase in *Principles of Psychology* (1890, ch 9) to indicate the flow of inner experience.

Consciousness, then, does not appear to itself chopped up in bits. Such words as “chain” or “train” do not describe it fitly as it presents itself in the first instance. It is nothing jointed; it flows. A “river” or a “stream” are the metaphors by which it is most naturally described. *In talking of it hereafter, let us call it the stream of thought, of consciousness, or of subjective life.*
(William James, 1890 1:239)

James, in his landmark work, *Varieties of Religious Experience* (1902), again breaks new ground by addressing the functional value of meditation. Considering his times, James shows a remarkable understanding of some higher aspects of Buddhist, even though in his footnote, he cites his source as a German book on Buddhism by the German Orientalist, CF Koeppen.²

The Buddhists use the word “samadhi” as well as the Hindus; but “dhyana” is their special word for higher states of contemplation. There seem to be four stages recognized in dhyana. The first stage comes through concentration of the mind upon one point. It excludes desire, but not discernment or judgment: it is still intellectual. In the second stage the intellectual functions drop off, and the satisfied sense of unity remains. In the third stage the satisfaction departs, and indifference begins, along with memory and self-consciousness. In the fourth stage the indifference, memory, and self-consciousness are perfected. [Just what “memory” and “self-consciousness” mean in this connection is doubtful. They cannot be the faculties familiar to us in the lower life.] Higher stages still of contemplation are mentioned—a region where there exists nothing, and where the meditator says: “There exists absolutely nothing,” and stops. Then he reaches another region where he says: “There are neither ideas nor absence of ideas,” and stops again. Then another region where, “having reached the end of both idea and perception, he stops finally.” This would seem to be, not yet Nirvana, but as close an approach to it as this life affords.
(William James, 1902:246)

When the Sinhala anagarika (lay renunciant) **Dharmapala** (1864-1933),³ in 1903, attended one of James's lectures at Harvard, James was quoted as having said to him, “Take my chair. You are better equipped to lecture on psychology than I.”⁴ In 1904, after one of Dharmapala's meditation lectures there, on the topic of not-self,

² CF Koeppen, *Die Religion des Buddha*, Berlin, 1857, 1:585 ff.

³ Dharmapala attended the Parliament of World Religions in Chicago, 1893: see 10.3 below.

⁴ Ananda Guruge (ed), *Return to Righteousness: A Collection of Speeches, Essays and Letters of Anagarika Dharmapala*. Sri Lanka: Ministry of Education af Cultural Affairs, 1965:681.

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James declared, “This is the psychology everybody will be studying twenty-five years from now.”⁵ But, as we shall see, he was too optimistic.

3 Fall and rise introspectionism [Section omitted: see <http://dharmafarer.googlepages.com>.]

4 First-person approach

What do you discover when you look into your own mind? William James was confident: “*Every one agrees that we there discover states of consciousness*” he said. But a hundred years later we might be inclined to raise a few awkward questions. What does looking mean? Who is looking into what? Does the looking itself change what is seen? Does reporting destroy what we are trying to describe? Can everything be reported when some experiences are supposed to be ineffable? What are states of consciousness anyway? (Blackmore 2003:370)

Modern scholars have noted that it is not that introspection is a useless method for obtaining descriptive accounts of subjective experience, but rather that psychology needs to discriminate carefully between the description of subjective phenomena and causal-explanatory theorizing.⁶

In fact, we have many good examples of scientists looking inwards and reporting what they see. We have, for example, the methods of trained introspection developed by Wundt and Titchener, and James’ description of the “flights and perching” in the stream of consciousness,⁷ of getting up on a cold morning,⁸ and his studies of religious experiences. Various introspections on self-experience are found in Csikszentmihalyi’s studies of flow and various altered states of consciousness.⁹ **Evan Thompson** points out the facility of contemplative training as a research tool in the neurophenomenology of consciousness, thus:

... it stands to reason that people vary in their abilities as observers and reporters of their own mental lives, and that these abilities can be enhanced through mental training of attention, emotion, and metacognition. Contemplative practice is a vehicle for precisely this sort of cognitive and emotional training. On the other hand, it stands to reason that mental training should be reflected in changes to brain structure, function, and dynamics. Hence, contemplative practice could become a research tool for developing better phenomenologies of subjective experience and for investigating the neural correlates of consciousness. (Thompson 2007:3)

So how does one cultivate such an accurate and useful first-person observation? A number of modern scientists, have examined this question.¹⁰ One of the clearest insight here is succinctly stated by **David Chalmers**:

The task of a science of consciousness, as I see it, is to systematically integrate two key classes of data into a scientific framework: *third-person data*, or about behavior and brain processes, and *first-person data*, or data about subjective experience....

Both third-person data and first-person data need explanation. An example is given by the case of musical processing. If we observe a subject listening to music, relevant third-person data include those concerning the nature of the auditory stimulus, its effects on the ear and the auditory cortex of the subject, various behavioral responses by the subject, and any verbal reports the subject might produce. All of these third-person data need explanation, but they are not all that needs explanation. As anyone who has listened to music knows, there is also a distinctive quality of subjective experience associated with listening to music. A science of music that explained

⁵ David Scott 2000: 335.

⁶ Hurlbert, RT; & CL Heavy, “Telling what we know: Describing inner experience.” *Trends in Cognitive Sciences* 9, 2001:400-403.

⁷ W James, 1890 1:243.

⁸ W James, 1890 1:562.

⁹ Eg M Csikszentmihalyi, *Flow: The psychology of optimal experience*. NY 1990.

¹⁰ See eg FJ Varela & J Shear (eds), *The View From Within*, 1999; DD Price & M Aydede, “The experimental use of introspection in the scientific study of pain and its integration with third-person methodologies: The experiential-phenomenological approach,” 2005:12.

the various third-person data listed above, but that did not explain the first-person data of musical experience, would be a seriously incomplete science of music. A complete science of musical experience must explain both sorts of phenomena, preferably within an integrated framework....

The lesson is that *as data*, first-person data are irreducible to third-person data, and vice versa. That is, third-person data alone provide an incomplete catalogue of the data that need explaining: if we explain only third-person data, we have not explained everything. Likewise, the first-person data alone are also incomplete. A satisfactory science of consciousness must admit both sorts of data, and must build an explanatory connection between them.

(Chalmers 2004:1-3, digital ed)

The Buddhist contemplative tradition provides excellent training in first person observation, and shows pragmatic refinement and theoretical sophistication.¹¹ Where James described introspection as simply “looking into our own minds and reporting what we there discover” (1890 1:185), Buddhism teaches sustained attention to and analytic discernment of one’s own mental processes. Buddhist phenomenology distinguishes between attentional stability and instability due to the two hindrances of mental excitation and laxity, as explained by **Allan Wallace**:

Thus, the first task in the Buddhist investigation of the mind is to so refine the attention and balance the nervous system that the mind is made properly functional, free of the detrimental influences of excitation and laxity. To do so, those two hindrances must be clearly identified in terms of one’s own experience. Excitation, the first obvious interference to observing the mind, is defined as an agitated, intentional mental process that follows after attractive objects,¹² and it is a derivative of compulsive desire.¹³ Laxity, on the other hand, is an intentional mental process that occurs when the attention becomes slack and the meditative object is not apprehended with vividness and forcefulness. It is said to be a derivative of delusion.

(Wallace 1999:176)

Furthermore, Buddhist phenomenology discusses the metacognitive¹⁴ monitoring of these qualities of attention, and Buddhist epistemology looks at the degree to which a mental cognition ascertains or fails to ascertain its mental object, according to various conditions.¹⁵ According to this perspective, if the stream of thought and feeling is lucid, rather than turbulent or murky, then introspection, in James’ sense, will be much richer in its discoveries and report.¹⁶

5 Towards a contemplative science of mind

A dialogue is a two-way process, and in a successful dialogue both sides are somehow transformed. As mind science interacts with Buddhism learning about it and applying its mindfulness principles and methods, there is the process of what has been called “the buddhization of psychology.” And Buddhism, learning from the scientists, will have to fine-tune their religious approach, or even update or abandon outmoded teachings and practices: this is “the psychologization of Buddhism.” Or, in a more restricted, this latter expression would refer to the kind of Buddhism that the scientists are familiar with or accept.¹⁷ [10.3]

¹¹ Depraz, Varela and Vermersch, *On Becoming Aware: A pragmatics of experiencing*. Amsterdam & Philadelphia: John Benjamin Press, 2003

¹² Wallace 1998:168. A mental process is said to be *intentional*, not because one intends for it to occur, but because it has its own cognized object or objects. (Wallace’s fn)

¹³ Compulsive desire is a mental affliction that by its very nature superimposes a quality of attractiveness upon its object and yeats for it. It distorts the cognition of that object, for attachment exaggerates its admirable qualities and screens out its disagreeable qualities. Cf Guenther & Kawamura, 1975:96; Rabten 1979:74 f.

¹⁴ “Metacognitive” is the adj of **metacognition**, an important concept in cognitive theory, consisting of two basic and simultaneous processes: *monitoring your progress* as you learn, and *making changes and adapting your strategies* if you perceive you are not doing well enough. In simple terms, it involves learning about how we learn, thinking about how we think: see further: <http://coe.sdsu.edu/eet/Articles/metacognition/start.htm> or <http://www.gse.buffalo.edu/fas/shuell/cep564/Metacog.htm>.

¹⁵ G Dreyfus 1997.

¹⁶ For a good summary of other technical benefits, see also Evan Thompson 2006:4 f.

¹⁷ See FA Metcalf 2002:353-361.

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Understandably, mind scientists are now more enthusiastic than ever to gain a deeper understanding of experience and consciousness by making contemplative phenomenology a partner in the scientific investigation of consciousness. **Varela, Thompson and Rosch** (1991) have described this partnership approach as one of *mutual circulation*, a “back-and-forth communication between science and experience” (1991:237), where each domain of cognitive science, phenomenological philosophy, and contemplative mental training is distinct and has its own degree of autonomy—its own methods, motivations, and concerns—but they also overlap and share common areas. These domains, like circles, flow into and out of one another, so as to be mutually enlightening.¹⁸

An important catalyst in working towards a workable contemplative science of mind is not to take conventional categories, especially those of science and religion, for granted. Traditionally, in the West, ever since the rise of the scientific revolution in 16th century, science has become a secular discipline, often opposed to religion. In the East, however, science has generally always grown and worked in harmony with religion, even in the service of it. **Piet Hut**, in the Conclusion to *Buddhism and Science*,¹⁹ asks some relevant questions:

What can be the stage for a dialogue between Buddhism and science? Calling Buddhism a religion is a not very accurate description, and the very notion that science might produce a worldview is not correct, since there is still much that is left out from a scientific description. At this point it might be more prudent to start talking about mutual respect and inspiration between science and Buddhism, with an eye toward future more detailed discussions. One way of phrasing a possible middle ground between both is to start by viewing life as a laboratory, as an opportunity to examine ourselves and our world, using working hypotheses rather than doctrines.

(Piet Hut 2003:399)

This is not suggest that we stop viewing Buddhism as a religion, for there will be parts of Buddhism that are forever religious, especially for those who turn to it for personal or apotropaic way. Nor should science water down its measures and objectivity. The middle ground is the common desire to find some answers to a set of similar problems, such as those mentioned by Susan Blackmore (2003:370) [4]. Perhaps both sides would be able to see the same things if they share their insights, and help each other with the words and discipline to express these truths.

6 Meditation and the human brain

[6.1-6.3]: These sections may be downloaded from <http://dharmafarer.googlepages.com>.

6.4 HOW DOES MEDITATION AFFECT THE BRAIN? For decades, western researchers have tested monks and yogis and found their remarkable abilities to control respiration, brain waves, or core body temperature.²⁰ Scientists are now beginning to focus more on the normal rather than abnormal, by studying everyday adaptive qualities and their effects on health and wellbeing.²¹

In May 2001,²² a very significant meeting between science and religion in recent times took place when two key people—both studying the brain each in their own way—met and, in a sense, highlighted the growing dialogue and cooperation between mind science and Buddhist meditation. **Richard Davidson**, 54, director of the WM Keck Laboratory for Functional Brain Imaging and Behavior and University of Wisconsin professor of psychology and specialist in human emotions, took the Dalai Lama and his delegation on a tour of the new US\$10 million facility.²³

Scientists like Richard Davidson had sought the ideas and assistance of Buddhists like the Dalai Lama in their quest to answer such questions as: Can meditation be used to change brain circuits associated with emotions? Do different kinds of meditation practice produce distinct brain effects? Does the development of certain

¹⁸ For technical issues and difficulties of “mutual circulation,” see a summary by Evan Thompson 2006:6.

¹⁹ See esp Piet Hut’s “Conclusion: Life as a laboratory” in AB Wallace (ed), *Buddhism and Science*, 2003:399-415.

²⁰ Delmonte 1984.

²¹ Pollard 2004:30.

²² This section is mainly based on the article “The Dalai Lama and scientists unite to study meditation” (23 May 2001) by Dian Land, accessed 9 Nov 2006 from <http://www.news.wisc.edu/6205.html>.

²³ For related researches at [University of Wisconsin](http://www.news.wisc.edu/6205.html), see <http://psyphz.psych.wisc.edu/web/news.html>.

brain areas through meditation impact physiological factors that may prevent illness? Which areas of the brain are developed in long-time practitioners of meditation? How long does it take before meditation produces significant brain changes?

Davidson's best-known work focusses on neuroplasticity, the capacity of the brain to develop and change throughout life, something Western science once thought impossible. By wiring up Tibetan Buddhist monk meditators, Davidson was able to demonstrate precisely how meditation alters brain function. His research effectively legitimizes the study of internal states of consciousness by linking them to the objective reality of electrical activity in the central nervous system.²⁴ Davidson and his team published their 1992 experiment and findings in the *Proceedings of the National Academy of Sciences* in November 2004.²⁵ The research made its way into *The Wall Street Journal*,²⁶ and Davidson instantly became a celebrity scientist.²⁷

Davidson's studies on the Tibetan meditating monks yielded new and valuable data. It is possible, however, that the monks' positive emotional state is the result of a stress-free and ordered monastic lifestyle, or of a disciplined meditation regimen. However, that this need not be the case was shown with a series of studies with employees at **Promega**—a biotech firm in Wisconsin.

Prior to the study, it was established that the workers exhibited high levels of right-brain activity and reported feeling "stressed-out" and unhappy with their jobs. After eight weeks of meditation training and practice, the activity in the left prefrontal cortex increased significantly, and the workers reported feeling happier, with a renewed sense of enthusiasm for their life and work. This heightened activity persisted for at least four months after the experiment, when the subjects were tested again.

Moreover, the meditators who showed the greatest increase in prefrontal activity after training showed a correspondingly more robust ability to generate antibodies in response to receiving a flu vaccine. The findings, **Jon Kabat-Zinn** suggested, demonstrated qualitative shifts in brain activity after only two months of mindfulness meditation that mirror preliminary results seen in expert meditators like monks.²⁸

The control group showed no change. While more long-term research is required to eliminate confounding factors, the findings are very optimistic in that meditation practice can alter an individual's emotional setting towards the positive, which may then become the mind's default state.

[6.5-6.8]: These sections may be downloaded from <http://dharmafarer.googlepages.com>.

6.9 PROVEN BENEFITS OF MEDITATION. An imaging study led by Massachusetts General Hospital researchers showed that certain areas of the cerebral cortex, the outer layer of the brain, grew thicker in participants who were experienced in the Buddhist insight meditation. The cerebral cortex is associated with emotional, attention, interoceptive and sensory processes. The thickening of the cortical layer in the experienced meditators suggests that meditation can reduce the thinning of the cortex that typically occurs with aging.²⁹ Other important benefits of meditation attested by scientific researches include the following:

- Students who lost a night's sleep, after meditating, improved their performance due to better attention span and focus: meditation may give the sleepy brain an edge. (Time Magazine, 23 Jan 2006).

²⁴ See A Lutz et al 2007:61 f.

²⁵ See also R Davidson et al, "Alterations in brain and immune function produced by mindfulness meditation," *Psychosomatic Medicine* 65 2003:564-570.

²⁶ See http://psyphz.psych.wisc.edu/web/News/All_in_Your_Head.html.

²⁷ See also "Is Buddhism good for your health?" (Stephen S Hall), *New York Times*, Sunday 12 Nov 2006: <http://query.nytimes.com/gst/fullpage.html?sec=health&res=940CE1DB173BF937A2575AC0A9659C8B63>. On the academic objection to Davidson's relationship with Buddhism (and the Dalai Lama), see Geirland 2006.

²⁸ R Davidson, Kabat-Zinn et al 2003; *Harvard University Gazette* 23 Jan 2006; A Lutz et al 2007:57.

²⁹ The increased thickness of the cortical layer is only about 4 to 8 thousandths of an inch. "These increases are proportional to the time a person has been meditating during their lives," **Lazar** notes. "This suggests that the thickness differences are acquired through extensive practice and not simply due to differences between meditators and non-meditators." (WJ Cromie, *Harvard University Gazette* 23 Jan 2006), <http://www.news.harvard.edu/gazette/daily/2006/01/23-meditation.html>. **A Lutz et al** adds, "Increased cortical thickness could be due to greater arborization per neuron, increased glial volume, or increased regional vasculature, all of which are important for neural function." (2007:30). **Sara W Lazar et al**, "Meditation experience is associated with increased cortical thickness." *Neuroreport* 16,17 November 28, 2005:1893-1897; USA Today 14 Nov 2005; *Medical Study News* 14 Nov 2005, http://www.news-medical.net/print_article.asp?id=14477; for **Lazar** interview, see <http://www.scicon.org/2006/02/meditation-may-increase-the-thickness-of-the-cortex/>.

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- Meditation make employees sharper, improves productivity, in large part by preventing stress-related illness and reducing absenteeism. (Time Magazine, 23 Jan 2006).³⁰
- Meditation not only activates the left prefrontal cortex (reflecting a positive mental state), but such subjects also showed a significantly greater antibody response to influenza vaccine (in other words, they responded very well to the immunization process).³¹
- Meditation causes healthy physiological changes: increase in blood-flow but reduced heart rate;³² lowered blood pressure,³³ muscles apparently stop producing carbon monoxide, decreased renal and hepatic blood flow, increased cerebral flow,³⁴ lower breathing rate (the body needs less oxygen).³⁵
- In some meditation (eg the Tibetan Tummo, or *caṅḍāli*, practice) heat is often a byproduct, and in some cases the meditator can voluntarily increase heat up to as much as 8°C in their toes and fingers.³⁶
- The mind can be trained through voluntary emotion regulation to be positive and happy.³⁷
- Even simple meditation brings one relaxation, self-awareness, greater self-control, greater awareness of one's senses, and deeper intuition within a nonreligious context.³⁸
- Vipassana meditation, a popular modern form of Buddhist meditation, is being successfully used in the rehabilitation of inmates in Indian prisons (especially at Tihar Central Prison, New Delhi, and at the Baroda Jail, Gujarat)³⁹ and in North America.⁴⁰

For Buddhism, the ultimate purpose of meditation is to free on from suffering and to gain spiritual liberation. However, meditation has its immediate and mundane benefits for those who need them. It can certainly create a more conducive environment for living. But meditation needs to be cultivated (*bhaveti*). Just as schoolchildren take PE, Davidson points out, “Wouldn’t it be wonderful if they also attended a class called ME—mental education?”

7 The mind and the brain

7.1 IS THE BRAIN THE SEAT OF CONSCIOUSNESS?

In 1980,⁴¹ it is reported that **John Lorber** (1915-1996), neurology professor at the University of Sheffield, made an amazing discovery while treating one of the mathematics students for a minor ailment. A campus doctor, noticing that the student’s head was a little larger than normal, referred him to professor Lorber. The student in question was academically bright, with an IQ of 126 and was expected to graduate. Through a CAT-scan,⁴² however, Lorber discovered that the student’s cerebrum had been squeezed out by fluid pressure.

³⁰ On how Promega workers benefitted from meditation, see 7.2 above.

³¹ Rosenkranz et al 2003.

³² Delmonte 1984; Zeier 1984; Sudsuang et al 1991.

³³ Sudsuang et al 1991.

³⁴ Newberg et al 2001.

³⁵ Hirai 1974, Zeier 1984; Kesterson & Clinch 1989; Benson et al 1990.

³⁶ Benson et al 1982.

³⁷ RJ Davidson 2005.

³⁸ GF Kelly 1996: 49-66.

³⁹ **Kiran Bedi**, the former Inspector General of Prisons in New Delhi, successfully introduced Vipassana into these prisons. Their success has been so dramatic that the Indian Government has introduced Vipassana in all of India’s prisons. See <http://www.prison.dhamma.org/dtdv.htm>. See related film documentary, “Doing Time, Doing Vipassana,” winner of the Golden Spire Award (1998 San Francisco Film Festival), and winner of the 1998 NCCD [National Council on Crime and Delinquency] Pass Awards: <http://www.karunafilms.com/Dtdv/Dtdv.htm>.

⁴⁰ On the success of Vipassana meditation courses in various North American prisons, radio interview, Lucia Meijer’s article, history of Vipassana courses in American prisons, see <http://www.prison.dhamma.org/usprison.htm>. Listen to interview with **Lucia Meijer**, prison administrator of the North Rehabilitation Facility, a minimum-security of the King County jail system, Seattle, Washington: <http://www.prison.dhamma.org/lminterview.ram> (needs Windows Media player, Real Player or similar player).

⁴¹ This section is adapted from Roger Lewin, “Is your brain really necessary?” *Science* 210 12 Dec 1980:1232-1234, accessed on 7 Nov 2006 from http://www.alternativescience.com/no_brainer.htm. See also *Science Digest* 91,10 Oct 1983.

⁴² CAT = “Computed Axial Tomography” is the process of using computers to generate a three-dimensional image from flat (ie, two-dimensional) x-ray pictures, one slice at a time. Also called CT scan or body section roentgenography,

Instead of two hemispheres filling the cranial cavity, usually 4-5 mm thick, the student had less than 1 mm of cerebral tissue covering the top of his spinal column. The student was suffering from hydrocephalus, the condition in which the cerebrospinal fluid, instead of circulating around the brain and entering the bloodstream, is dammed up inside the skull. He had virtually no brain at all!

Normally, the condition is fatal in the first months of childhood. Even where an individual survives he or she is usually seriously handicapped. Somehow, though, the Sheffield student had lived a perfectly normal life and went on to gain an honours degree in mathematics.

This case is by no means as rare as it seems. In 1970, a New Yorker died at the age of 35. He had left school with no academic achievements, but had worked at manual jobs such as being a building janitor, and was popular in his neighbourhood. Tenants of the building where he worked described him as routinely doing his daily chores, such as tending the boiler, and reading the tabloid newspapers. When an autopsy was performed to determine the cause of his premature death he, too, was found to have practically no brain at all.

Professor Lorber had identified several hundred people who had very small cerebral hemispheres but who appeared to be normal intelligent individuals. Some of them he described as having “no detectable brain,” yet they had scored up to 120 on IQ tests.⁴³

No one knows how people with “no detectable brain” are able to function at all, let alone to graduate in mathematics, but there are a couple theories. One is that there is such a high level of redundancy of function in the normal brain that what little remains is able to adapt as a surrogate for the missing hemispheres. Another suggestion similarly refers to the popular notion that we only use a small percentage of our brains anyway—perhaps as little as only 10 per cent.

The trouble with these ideas is that recent research seems to contradict them. The functions of the brain have been mapped comprehensively and although there is some redundancy, there is also a high degree of specialization—the motor area and the visual cortex being highly specific, for instance. Similarly, the idea that we “only use 10 per cent of our brain” is a misunderstanding dating from research in the 1930s in which the functions of large areas of the cortex could not be determined and were dubbed “silent,” when, in fact, they are linked with important functions like speech and abstract thinking.

Lorber’s findings also remind us of the mystery of memory. At first, it was thought that memory would have some physical substrate in the brain, like the memory chips in a PC. But extensive investigation of the brain has surprisingly shown that memory is not located in any one area or in any specific substrate. As one eminent neurologist put it, “memory is everywhere in the brain and nowhere.”

But if the brain is not a mechanism for classifying and storing experiences and analysing them to enable us to live our lives then what on earth is the brain for? And where is the seat of human intelligence? Where is the mind?

One of the few biologists to propose a radically new approach to these questions was Cambridge-trained biologist, **Rupert Sheldrake**. In his book *A New Science of Life* (1999), Sheldrake rejected the idea that the brain is a warehouse for memories and suggested it is more like a radio receiver for tuning into the past. Memory is not a recording process in which a medium is altered to store records, but a journey that the mind makes into the past via the process of morphic resonance. Such a “radio” receiver would require far fewer and less complex structures than a warehouse capable of storing and retrieving a lifetime of data. This may sound like science fiction, but it is difficult to find a better explanation.

7.2 THE MIND IS NOT JUST THE BRAIN. One question that both western psychology and contemporary Buddhist psychology seek to answer is the one regarding the seat of consciousness: Where is consciousness located? Is the mind located in the brain? Is the mind the function of the brain? Let us begin with the basics. What is the brain? **The brain** can be defined as that portion of the vertebrate central nervous system that is enclosed within the cranium (the skull), connected to the spinal cord, and composed of gray matter and white matter. It acts as the primary centre for the regulation and control of bodily activities, receiving and interpreting sensory impulses, and transmitting information and instructions to the muscles and bodily organs.⁴⁴

⁴³ See also Brahmavamso 2001:3.

⁴⁴ For interactive 3-D MRI/PET view of brain: <http://www.med.harvard.edu/AANLIB/cases/caseNA/pb9.htm>.

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Buddhism, however, has never regarded the brain as the seat of consciousness, thought, memory, and emotion. As Hamilton notes

Nowhere in the early texts is “mind” in this context equated with the brain, and, in spite of its materialistic understanding of the form-*khandha*, the Theravāda tradition as a whole has not interpreted mind to mean brain. As explained in Chapter Two [“The Indian Context”], in the early texts “mind” seems to refer to the most preliminary stage of filtering and organizing of experiential data according to whether it is seen, heard, smelt, tasted, touched or non-sensory (that is, abstract). (Hamilton 2000:167 n27)

Nowhere in the Canon does the Buddha assign a specific seat of consciousness, as those of the other senses. There was a popular cardiac theory of his time, one that was evidently upheld by the Upaniṣads, where we find that the breath is associated with “soul,” with death, and with the heart as well.

The Visuddhimagga clearly places the mind (*mano*), specifically in the heart, in the form (*rūpa*) aggregate: ‘The heart-basis has the characteristic of being the [material] support for the mind-element and for the mind-consciousness element’ (*hetu, mano, viññāṇa, dhātūnaṃ, nissaya, lakkhaṇaṃ hadaya, vatthu*, Vism 14.60/447). The characteristics of the mind are then shown, with its function (*rasa*) being to “subserve” (*ādhāraṇa*) and the “manifestation” (*paccupaṭṭhāna*) being “the carrying of them” (*ubbahana*).

Apparently, the Buddha knows of this cardiac theory, but nowhere in the Suttas do we find him referring to it. Even in **the Vibhaṅga**, in the definition of the mind-element and mind-consciousness-element, the word *hadaya* is used in a purely mental, and not physical, sense (Vism 88 f). The brain (*mattha, luṅga*), moreover, seems to have been added as the thirty-second part of the body in **the Paṭisambhidā, magga** (Pm 1.7). The earliest canonical allusion to the seat of consciousness is found in **the Paṭṭhāna**, even then very obliquely, almost cryptically, mentioned as “depending on that material form” (*yam rūpam nissāya*, Paṭ 1.4), without ascertaining whether *rūpa* is the heart (*hadaya*) or the brain (*matthaluṅga*). However, for commentators like Buddhaghosa and Anuruddha,⁴⁵ the seat of consciousness is clearly the heart, despite the fact that the Buddha has never accepted the popular cardiac theory of his time. This has led **SHJ Sugunasiri** to conclude that

No doubt the much more detailed characterization of the heart in the Visuddhimagga speaks to the creative genius of Buddhaghosa that Ñāṇamoli [Vism 497 n26] talks about. But the parallel between the specific characterization of the heart in relation to the lotus and the placing of “the mind-element and the mind-consciousness element” in the blood that is in the hollow of the heart are too close to be dismissed as being merely coincidental or accidental. The inevitable conclusion, then, has to be that the origin of the view of the seat of consciousness as being in the heart is at least partly Upaniṣadic. (Sugunasiri 1995:417)

Sugunasiri strongly rejects the identification of the heart-base as the seat of consciousness as “a gross misrepresentation of the Buddha,” and concludes, by way of the commonly accepted Buddhist view today, that “the mind is extended throughout the body, through its neuroskeletal system” and that

the mind is in every one of over several trillion cells in one of us, residing in each DNA molecule and in instantaneous communication with every other DNA, with research assigning this function of communication to “neuropeptides” or “information molecules.” (Sugunasiri 1995:423)

Unfortunately, Sugunasiri only quotes from writers of popular psychology in popular psychology magazine articles.⁴⁶

7.3 THE MIND IS TRAINABLE. In the early texts, we are often told that the Buddha, when he teaches, would first ensure that the mind of the listener or the audience is well prepared by the gradual teaching (*ānupubbī, kathā*). On other words, the Buddha prepares the listening mind the disciple before going on the higher truths. The well known stock passage found in the early texts runs as follows:

⁴⁵ See Abhs:BRS 6.3/239(5).

⁴⁶ See a related story, “What is the biggest thing in the world?” [10.3].

Then the Blessed One gave him a gradual instruction—that is to say, he spoke on giving (*dāna*), on moral virtue (*sīla*) and on the heavens (*sagga*); he explained the danger, worthlessness, and impurity of sensual pleasures (*kām'ādīnava*); and the advantages of renunciation (*nekkhamm'ānisamsa*). When the Blessed One perceived that the listener's mind was prepared, pliant, free from obstacles, elevated and lucid, then he explained to him the teaching peculiar to the Buddhas, that is to say: suffering, its arising, its ending, and the path.⁴⁷

Only when the listener's mind is “prepared, pliant, free from obstacles, elevated and lucid” (*kalla, cittaṃ mudu, -cittaṃ vinīvaraṇa, cittaṃ udagga, cittaṃ pasanna, cittaṃ*), does the Buddha teach the four noble truths and deeper teachings. The Commentaries explain the key terms as follows:

- “prepared mind” (*kalla, cittaṃ*) — “a healthy mind” (*aroga, cittaṃ*) (DA 3:92);
- “pliant mind” (*mudu, cittaṃ*) — “a mind free of stiffness, rid of ill will by way of lovingkindness” (*vyāpāda, vigamena mettā, vasena akathina, cittaṃ*) (UA 283);
- “free from hindrances” — “an unobstructed mind due to non-agitation by the ridding of restlessness and remorse” (*udhacca, kukkuccha, vigamena avikkhipanato na pihita, cittaṃ*) (UA 283; PmA 1:232);
- “elevated mind” (*udagga, cittaṃ*) — “not faint-hearted, supported by the ridding of sloth and torpor” (*thīna, middha, vigamena sampaggaha, vasena alīna, cittaṃ*) (UA 283);
- “lucid mind” (*pasanna, cittaṃ*) — “the mind that is focused on right practice by the ridding of doubt” (*vicikicchā, vigamena sammā, paṭipattiyā adhimutta, cittaṃ*) (UA 283); “a mind brightened by faith by way of karmic fruit, by way of faith in the three jewels” (*ratana-t, taya, saddhāya kamma, phala, saddhāya ca pasanna, mānasam*) (ItA 1:73).

Basically, we see here that the Buddha, first of all, clears away any immediate issues troubling the listener, so that his mind is healthy (*aroga*), and other negative states, including the temporary suppression of unwholesome sense-desires (*kāma-c, chanda*) that is the basis for ill will (*vyāpāda*) and the other four mental hindrances (sloth and torpor, restless and remorse, and doubt). Such a clear and light mind is, in fact ready for dhyanic meditation, too.

In the early texts, the seat of consciousness is never located in the brain, nor is it in the heart (although post-Buddha teachings posit it so). In fact, consciousness or the mind is, in a broad sense, not located “anywhere, but is everywhere.” Buddhism sees the mind and consciousness as evolving processes: those of the spiritually undeveloped, they are “small” (*paritta*), in the highly evolved beings, they are “exalted” or “great” (*mahaggata*), even if such experiences are attained temporarily through dhyana, as **Sujato** notes:

Here again, as in the contemplation of feelings, a distinctive facet of all the satipatthana material is the direct experience of the “exalted” [*mahaggata*] mind, the “unexcelled” [*anuttara*] mind, the mind “in samadhi” [*samāhita*], the “released” [*vimutta*] mind—all synonyms for jhana. (Sujato 2004b:150)

The terms Sujato refers to here comes from the contemplation of the mind (*cittānupassanā*) in **the Sati-paṭṭhāna Suttas** (D 22; M 10), which is the locus classicus for the Buddhist view of the mind, and the formula is a stock passage found through the four Nikāyas:⁴⁸

⁴⁷ *Atha kho bhagavā... ānupubbīkatham katesi seyyathīdam. Dān, akatham sīla, katham sagga, katham kāmānam ādīnavam okāram saṃkilesam nekkhamme ca ānisamsam pakāsesi. Yadā bhagavā aññāsi... kalla, cittaṃ mudu, cittaṃ vinīvaraṇa, cittaṃ udagga, cittaṃ pasanna, cittaṃ, atha yā buddhānam sāmukkamsikā dhamma, desanā, taṃ pakāsesi: dukkham samudayam nirodham maggam.* (The VRI read *ānupubbīkatham* as either *anupubbim katham* or as *ānupubbim katham*.) See **Vinaya** (V 1:15, 16, 18, 19, 20, 23, 37, 181, 225, 237, 242, 243, 248; 2:156, 181, 182 x2); **Ambaṭṭha S** (D 1:110); **Kūṭa, danta S** (D 1:148); **Mahāpadānā S** (D 2:41, 43, 44); **Upāli S** (M 1:379); **Brahmāyu S** (M 2:145); **Sīha S** (A 4:186); **Ugga S 1** (A 4:209); **Ugga S 2** (A 4:213); **Suppabuddha Kuṭṭhi S** (U 49). See also **Udāyī S** (A 3:184).

⁴⁸ **Sāmañña, phala S** (D 2.209/1:79 f); **Subha S** (D 10.21/1:209); **Mahā Satipaṭṭhāna S** (D 22.12/2:299) = SD 13.2; **Satipaṭṭhāna S** (M 10.34/1:59) = SD 13.3; **Ākaṅkheyya S** (M 6.16/1:34); **Mahā Sīhanāda** (M 12.8/1:69); **Mahā Vaccha-gotta S** (M 73.21/1:495); **Mahā Sakul'udāyī S** (M 77.33/2:19); **Gopaka Moggallāna S** (M 108.20/3:12); **Kāya, gata, sati S** (M 119.39/3:98); **Susima S** (S 12.70/2:122); **Jhānābhiññā S** (S 16.9/2:213); **Taṇha-k, khaya S** (S 46.26/5:86 f); **Nibbedha, bhāgiya S** (S 46.28/5:88); **Pubba S** (S 51.11/5:263); **Paṃsu, dhovana S** (A 3.100/1:255); **Upakkilesa S** (A 5.23/3:18);

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And how, bhikshus, does a monk dwell observing the mind⁴⁹ in the mind?

Here, bhikshus,⁵⁰

- (1) a monk is aware of a lustful mind as ‘Lustful mind,’
or, he is aware of a lust-free mind as ‘Lust-free mind.’
- (2) Or, he is aware of a hating mind as ‘Hating mind,’
or, he is aware of a hate-free mind as ‘Hate-free mind.’
- (3) Or, he is aware of a deluded mind as ‘Deluded mind,’
or, he is aware of an undeluded mind as ‘Undeluded mind.’
- (4) Or, he is aware of a contracted mind as ‘Contracted mind,’⁵¹
or, he is aware of a distracted mind as ‘Distracted mind.’⁵²
- (5) Or, he is aware of an exalted [great] mind as ‘Exalted mind [Great mind],’⁵³
or, he is aware of an unexalted mind as ‘Unexalted mind.’
- (6) Or, he is aware of a surpassable mind as ‘Surpassable mind,’
or, he is aware of an unsurpassable mind as ‘Unsurpassable mind.’⁵⁴
- (7) Or, he is aware of a concentrated mind as ‘Concentrated mind,’
or, he is aware of an unconcentrated mind as ‘Unconcentrated mind.’
- (8) Or, he is aware of a liberated mind as ‘Liberated mind,’
or, he is aware of an unliberated mind as ‘Unliberated mind.’

Of special interest here is the term *mahaggata*, “become great,” here referring to the mind during meditation. It has become great in two senses. Firstly, the “pliable (*mudu*) and workable (*kammañña*)” mind⁵⁵ has broken the barriers of the “normal” limited body-centric consciousness so that it enjoys dhyanic bliss, which is a supra-sensory or extrasensory experience because all the physical senses and consciousness as we know it have shut down. Secondly, the mind has “become great” in the sense that, if properly directed, it can cultivate various supernormal powers such as recollection of past lives (retro-cognition) and mind-reading (telepathy).⁵⁶

More importantly, on a spiritual level, the mind is free from thought, especially the kind of thinking that harps of issues and proliferates:

Becoming unrestricted by the boundaries of manifoldness [*papañca*], one sees that *all* manifoldness, including the grossest density of form, is correlated with ignorance [M 1:59]. And one is able there to release, so to speak, one’s dense body from its restrictions. (Sue Hamilton, 2000:197)

7.4 THE MIND CAN GROW BEYOND THE BODY. Only when the mind has transcended the world of the senses (*kāmāvacara*) that it can attain dhyanic bliss.⁵⁷ However, those reborn in such states (called *rūpāvacara*) are made of subtle form (*rūpa*) (such as light), and when this subtle form is further transcended, the formless realm (*arūpāvacara*), where consciousness become more pervasive, yet increasingly subtle.

Pañcaṅgika S (A 6.28/3:29); **Āhuneyya S 2** (A 6.2/3:280); **Gāvī Upamā S** (A 9.35/4:421); **Āhuneyya S** (A 10.97/5:199); Pm 1:113, 2:234.

⁴⁹ “Mind,” *citta*, also tr as “mind consciousness” (Brahmavamso). See SD 13 Introd (5C).

⁵⁰ See SD 13 Introd (9b): “Mental noting,” & Gethin 2001:46.

⁵¹ “Contracted mind,” *saṅkhittam cittaṃ*, ie “contracted” or “compressed” due to sloth and torpor.

⁵² “Distracted mind,” *vikkhittam cittaṃ*, ie “distracted” by restlessness and worry.

⁵³ “Exalted mind,” *mahaggatam cittaṃ*, ie “exalted” through having reached a dhyana or a formless attainment.

Properly speaking, only the first 4 form dhyanas are called *jhāna*, while the higher four formless bases are called *samāpatti* (attainment); and that the 4 formless attainments actually belong to the 4th form dhyana since they all possess the same two factors (ie equanimity and samadhi).

⁵⁴ Unsurpassable (*anuttaram*) mind, probably synonymous with “developed” mind. See D:W 592 n667 & Anālayo 2005 ad M 1:59.

⁵⁵ See **Pañhita Acchanna Vagga** (A 1.5/1:8) = SD 8.3(4).

⁵⁶ See Brahmavamso 2006:98.

⁵⁷ See **Dhyana** = SD 8.4.

Up to the last few decades the progress of psychology specifically, and science in general, can be said to have been impeded by its own methodology, that of third-person observation. One cannot learn much from *observing* another meditation; even the EEG (electro-encephalogram) readings measures only certain of the more “external” aspects of the still mind. It is like observing someone in love, but not really knowing how it really feels.

Similarly, meditation is a *first-person* experience, and has to be experienced directly: it is for one to “come and see” (*ehi,passika*). There is as yet no way dhyanas can be measured; in other words, there is no way scientifically useful reports could be written about such experiences: they cannot be shared. The next four levels of deep meditation, the four formless attainments (*arūpa samāpatti*) are even more profound. **Brahmavamso** list the following characteristics of the formless attainments:

- The mind remains inaccessible to the world of the five senses and all knowledge of the body.
- The mind persists in rock-like stillness, incapable of forming any thought or making any plan, for long periods of time.
- Comprehension is so frozen that one can hardly make sense, at the time, of one’s experience. Comprehension is achieved after emerging.
- The pure equanimity and mindfulness of the fourth jhāna remains as a foundation for each formless attainment. (Brahmavamso 2006:169)

The mind in the formless attainments perceives only the *mind-base*, very refined mind-objects. Here one feels as if one has transcended time itself:

Within the point of absolute now, time is without edge, undefined, empty, and immeasurable. It is infinite and nothing at the same time. It is unlimited (*anantā*). The experience of one-pointedness in time, seen early in the meditation, can be the key to understanding the simultaneous sense of infinity and emptiness in the immaterial [formless] attainments. (Brahmavamso 2006:169 f)

A brief definition of the four formless attainments will show that the mind is able to transcend space and time:⁵⁸

- (1) The attainment of unlimited space. Space is perceived as being infinite, empty, immeasurable and undefined. What usually limits space, that is, material form is perceived as being absent. Space has lost its meaning. This perception remains uninterruptedly for long periods as a state of profound contentment.
- (2) The attainment of unlimited consciousness. Within the attainment of unlimited lies the mind-base of unlimited consciousness. When the mind attends to this subtle nature of unlimited space, it totally disappears and is replaced by the perception of absolute one-pointed consciousness, which simultaneously feels infinite, empty, immeasurable and undefined. This perception remains uninterruptedly for a longer period.
- (3) The attainment of nothingness. Within the attainment of unlimited consciousness lies the mind-base of no-consciousness or nothingness: consciousness has lost its meaning. One has attained the one-pointedness of nothingness. This perception remains uninterruptedly for even longer.
- (4) The attainment of neither-perception-nor-non-perception. Within the attainment of nothingness, lies the mind-base of not even nothingness. If the mind is able to notice this feature, then even the perception of nothingness disappears, and one cannot really say whether there is consciousness or not. Subtle as this state is, it is still a perception.⁵⁹ (A 9.42)

The subtlety of these four formless attainment, indeed, even of the four form dhyanas, are beyond the capacity of even the most sophisticated machines we have today to measure. There is only one way to observe these states: it is to experience them first-hand. There will come a time when there are scientists who are able to experience such states and to describe them meaningfully to other scientists. That would be a time when the dividing line between being a scientist and a spiritual teacher, at least in terms of mental cultivation, would be significantly blurred. That is a time when Buddhist psychology would become almost indistinguishable from mind science; but it will be a profoundly new kind of science, one very different from that of our own times. It

⁵⁸ Summarized from Brahmavamso 2006:170-172.

⁵⁹ A 9.42.11/4:451 = SD 33.3.

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might be asked then if Buddhism as we know it today would be relevant any more, and this could well be a sign of the advent of the Dharma-ending age, that is, except for those who truly hold the stillness at the centre of their lives.

7.5 THE GREAT SELF. Even on a worldly karmic level, says **the Loṇa,phala Sutta** (A 3.99), when one's mind is "immeasurable" (*appamāṇa*), that is, one is not "small-minded," even small moral lapses would not trouble one beyond itself.

(a) Bhikshus, what sort of person who has done only a slight evil karma that might take him to hell?

Here, bhikshus, a certain person is of undeveloped body,⁶⁰ undeveloped moral virtue, undeveloped mind, undeveloped wisdom: he is (mentally) limited (*paritta*), with a **small self** (*app'ātuma*),⁶¹ dwelling with little suffering.⁶²

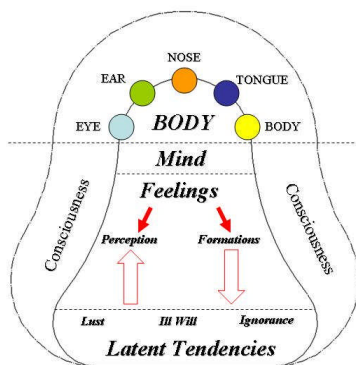
Such a person, bhikshus, is one who has done only a slight evil karma that might take him to hell.

(b) Bhikshus, what sort of person is one who has done that same slight evil karma that is felt right here and now—not in the least does it seem to be abundant at all?

Here, bhikshus, a certain person who is developed body,⁶³ developed moral virtue, developed mind, developed wisdom: he is mentally unlimited (*aparitta*), with a **great self** (*mah'attā*),⁶⁴ dwelling immeasurable (*appamāṇa*).

Such a person, bhikshus, is one who has done that same slight evil karma that is felt right here and now—not in the least does it seem to be abundant at all.

(A 3.99.2/1:249) = SD 3.5



A person with a "great self" might still commit a small evil karma but he does not experience its karmic fruits in hell (nor any of the lower states). In other words, this refers to a stream-winner, or a once-returner, or a non-returner: an arhat has already transcended rebirth.

One can transform the "small" self into a "great" one through such practices as the cultivation of lovingkindness (*mettā*) or of mindfulness (*satī*). The importance of the cultivation of lovingkindness is attested by **the Brahma,vihāra Sutta** (A 10.208),⁶⁵ where a meditator whose mind has "grown great" and "immeasurable" through lovingkindness knows:

Formerly my mind was limited (*paritta*) and undeveloped, but now my mind is boundless and well developed. Any karma done in a limited way⁶⁶ neither remains nor persists there.

Fig 7.5 The consciousness iceberg

©Piya Tan, 2006. Artwork by Vincent Kwan, Singapore.

⁶⁰ "Undeveloped in body," *abhāvita,kāya*, here meaning "resorting to self-torture, not taking care of one's body or health". See Introd above.

⁶¹ "Small self" (*app'ātumā*) or "insignificant self" (Harvey 1995:25, 56).

⁶² *Appa,dukkha,vihārī*. Comy: *Appakena pi pāpena dukkha,vihārī*, "he dwells in suffering because of the little evil" (AA 2:361). This phrase is clearly to be contrasted with *appamāṇa,vihārī* below.

⁶³ "Undeveloped body," *abhāvita,kāyo*. Comy to **Piṇḍola Bhāra,dvāja S** (S 35.127/4:111) glosses it as *abhāvita,-pañca,dvārika,kāyā*, "undeveloped in the body that are the five (sense-)doors," ie lacking in sense-restraint (SA 2:395).

⁶⁴ On the "great self," see SD 3.5 Introd.

⁶⁵ A 10.208/5:299. See **Brahma,vihāra S** (A 10.208) in SD 2.10 (this volume).

⁶⁶ "Karma done in a limited way," or "limited karma," *pamāṇa,kataṃ kammaṃ*, as in **Tevijja S** (D 1:251/13.77) & **Saṅkha(dhama) S** (S 4:322/ 42.8). AA here says that "limited karma" refers to sense-sphere karma (*kāmmāvacara,-kamma*)," and "unlimited karma" (*appamāṇa,kataṃ kammaṃ*) refers to form-sphere karma. It is called "unlimited" because it is done by transcending the limit, for it is developed by way of specified, unspecified and directional pervasion." SA on Saṅkha S explains that "When (simple) lovingkindness is said, this can be interpreted either as access concentration or absorption, but when it is qualified as 'liberation of mind' (*ceto,vimutti*) it definitely means absorption (*jhāna*)." The point is that if a person masters the "liberation of mind by lovingkindness" at the level of absorption, the karmic potential of this absorption attainment will take precedence over sense-sphere karma and will generate rebirth into the form realm. See Vism 309-311/9.49-58. (S:B 1149 n346; A:B 315 n73)

Instructions in the practice of mindfulness with an immeasurable mind is given in the Mahā Taṇha,saṅkhaya Sutta (M 38), where it is stated that one who feels neither attraction nor repulsion for any of the six sense-objects, and who has mindfulness of the body, lives “with a mind that is immeasurable (*appamāna, cetaso*),” in contrast to someone with the opposite qualities who dwells “with a mind that is limited (*paritta, cetaso*)” (M 38.40/1:270).

In this diagram [Fig 7.5] we see a diagrammatic representation of consciousness as comprising the conscious “public” aspects (above the “water”), the preconscious level where feeling operates, the subconscious depths where the latent tendencies lies, and also around one’s whole being. While the “inner” conscious aspects can become more focuses and clear, the “outer” consciousness can grow beyond oneself and the universe is the limit. One’s mind, in other words, is as far as where it can reach.

Nevertheless, due to the non-dogmatic and pragmatic nature of Buddhist inquiry, such questions pose no serious problem at all. While stating that he would change Buddhist beliefs should science demonstrate any of them to be false, the Dalai Lama⁶⁷ still insists that humans cannot be “reduced to nothing than biological machines, the products of pure chance in the random combination of genes, with no purpose other than the biological imperative of reproduction” (2005). This is of course a remarkable declaration of Buddhist faith, a contemporary lion-roar. In the same spirit, we see the commentators attempting to “update” certain Buddhist teachings and assumption, even if some of these innovations themselves need further updating to work for our own times.

8. Some meditation issues

8.1 IS GOD IN THE BRAIN? **Michael Persinger**, a professor of neuroscience at Laurentian University in Sudbury, Ontario, Canada, conducted experiments where volunteers wore a helmet-like device fitted with a set of magnets, and ran a weak electromagnetic signal across the brain hemispheres, specifically the temporal lobes [Fig 7.3]. Four in five people, he said, reported a “mystical experience, the feeling that there is a sentient being or entity standing behind or near” them, or what Persinger call a “sensed presence.” Some wept, some felt God had touched them, others felt fear and talked of demons and evil spirits. “That’s in the laboratory,” said Persinger. “They know they are in the laboratory. Can you imagine what would happen if that happened late at night in a pew or mosque or synagogue?” According to Persinger, his research showed that “religion is a property of the brain, only the brain and has little to do with what’s out there.”

Those who believe that the new science disproves the existence of God say they are holding up a mirror to society about the destructive power of religion. They say that religious wars, fanaticism and intolerance spring from dogmatic beliefs that particular gods and faiths are unique, rather than facets of universal brain chemistry.⁶⁸ During a PBS interview, Persinger clarifies the situation in a positive way:

The fact that we can now understand the brain basis to faith simply tells us that we can understand it more effectively. It doesn’t make it go away any more than when you look at the brain and you are seeing a sunset, and it is beautiful. It doesn’t take the beauty away, it just allows you to understand more of it. (PBS 2001)

It is important to note here that Persinger’s point is *not* that the brain is the source of the God-idea, but rather that such religious experiences tend to stimulate certain areas of the brain. Not all Persinger’s subjects reported that they experienced “God,” but most of them reported some kind of experience related to the kind of religious beliefs they held (or did not hold. The BBC reported in 2003 that when Persinger tested his magnetic helmet on **Richard Dawkins**,⁶⁹ one of Britain’s most renowned atheists, in a session that 40 minutes, Dawkins

⁶⁷ For the Dalai Lama’s official biography and work, see <http://www.tibet.com/DL/index.html>.

⁶⁸ For a discussion, see <http://www.pbs.org/wnet/religionandethics/week510/cover.html#right>.

⁶⁹ **Clinton Richard Dawkins** (1941-) is an eminent British ethologist, evolutionary scientist, popular science writer, and Oxford University professor. His 1976 book *The Selfish Gene* popularised the [gene-centric view of evolution](#) and coined term [meme](#), which became the basis for [memetics](#): see SD 26.3.

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found that the magnetic fields around his temporal lobes only affected his breathing and his limbs, but did not find god.⁷⁰

Scientists like radiologist **Andrew Newberg**⁷¹ have experimented on what happens in the brain during moments of faith. He worked with Buddhist scientist, **Michael Baime**,⁷² to study the latter's brain during meditation. By injecting radioactive tracers into Baime's bloodstream as he reached meditative focus, Newberg used a brain scanner to image the brain at the climax of his religious experience. [Fig 8.1]

Baime's blood-flow patterns not only activated his temporal lobes but the parietal lobes appeared almost completely to have shut down. The parietal lobes give us our sense of time and place. Without them, we may lose our sense of self. Followers of many of the world's religions often regard a sense of personal insignificance (a sort of "emptying of the self") and oneness with a deity as something to strive for. Newberg's work explains a neurological basis for such religious experiences.⁷³

8.2 TEMPORAL LOBE EPILEPSY. Why do we have religious beliefs? Might religion actually be a fundamental part of us like the need for sleep, food or sex? Is God in the brain? [8.1]. Such are the questions that neurotheology seek to answer. **Neurotheology**,⁷⁴ also known as biotheology, is the study of the neural basis of religion and spirituality. Neurotheology deals with the neurological and evolutionary basis for subjective experiences traditionally regarded as religious.

In recent times, "neurotheology" was used by **Andrew Newberg** [8.1], and others to describe the scientific study of religious experiences. Recently, it has been used by others to refer to specific religious perspectives, exploring brain states occurring as highly charged emotional and mental experiences that are universally regarded as "spiritual," "religious" or "mystical." Neurotheology has received renewed interest with the current encounter between eastern contemplative disciplines (such as Buddhist meditation) and the western mind sciences.

Some researchers claimed to have found evidence of a "God module" or "God spot" in the brain. In particular, they find an association between epileptic seizures in the left temporal lobe [Fig 7.3] and feelings of ecstasy sometimes described as a "sensed presence" (Persinger) of God [8.1].⁷⁵ This scientific notion is based on a long known fact, namely, that some subjects affected by temporal lobe epilepsy (TLE) report having intense spiritual experiences during their seizures, with some claiming that God spoke to them directly. Such patients would often become preoccupied with spiritual issues even during interictal (seizure-free) periods.

It is possible that the great names in religion, especially the God-centre ones, such as Moses, Ezekiel, Paul on the road to Damascus, and Joan of Arc had epileptic episodes which they attributed to religious experience.

⁷⁰ Persinger explained that there is a continuum in temporal lobe sensitivity and that Dawkins had temporal lobe sensitivity that was very much lower than most people (BBC 2003). **A more recent finding** was that of a 22-year-old woman, who, during a presurgical evaluation for epilepsy treatment, had her left temporoparietal junction undergo focal electrical stimulation, as a result of which she perceived an illusory figure that closely "shadowed" changes in the patient's body position and posture, but she did not recognize that the figure was an illusion of her own body (like many deluded schizophrenic patients). The researchers concluded that the patient was perceiving her own body. It is notable, the research team says, that hyperactivity in the temporoparietal cortex of patients with schizophrenia may lead to the misattribution of their own actions to other people. "Our findings may be a step towards understanding the mechanisms behind psychiatric manifestation such as paranoia, persecution and alien control." (Shahar Arzy et al 2006)

⁷¹ **Andrew Newberg** is an assistant professor in the department of Radiology in the Division of Nuclear Medicine, and an instructor in the Department of Religious Studies at the University of Pennsylvania. With Eugene d'Aquili & Vince Rause, he co-authored *Why God Won't Go Away: Brain Science and the Biology of Belief*, NY: Ballantine Books, 2001. See Newberg et al 2001; also Newberg & Iversen 2003. For his works, see <http://www.andrewnewberg.com/pub.asp>.

⁷² **Michael J Baime** is a meditation expert who runs a stress management program out of the University of Pennsylvania. Baime is a Clinical Assistant Professor of Medicine at the University of Pennsylvania School of Medicine. He has practiced meditation since the age of 14. See Newberg et al 2001 (which he co-authors).

⁷³ See also Alex Hankey 2006.

⁷⁴ The term was first used by English author Aldous Huxley (1894-1963), living in California, in his utopian novel, *Island* (1961), where he used it mainly in a philosophical sense.

⁷⁵ W Penfield records how stimulating the temporal lobe of epileptics made them have out-of-body experiences (OBE) (1955:458). See also Blackmore 2003:360.

Understandably, it has been called the “sacred disease” since the times of the Greek physician Hippocrates (c460–c370 BCE), often regarded as the father of Western medicine. Amongst famous literary figures who probably had the disorder were the Russian writer Fyodor Dostoevsky (1821-1881), the Dutch artist Vincent Van Gogh (1853-1890), the Danish existentialist philosopher and theologian Søren Kierkegaard (1813-1855), and the English mathematician, writer and Anglican clergyman Charles Lutwidge Dodgson, better known as Lewis Carroll (1832-1898).

[Epilepsy box]: May be downloaded from <http://dharmafarer.googlepages.com>.

One of the most convincing studies in the TLE in a religious context is that American neurologist **Gregory Holmes**. He has studied the life of Ellen G White (1827-1915), the American religious leader whose prophetic ministry was instrumental in founding the Sabbatarian Adventist movement that led to the rise of the Seventh-day Adventist church.⁷⁶ Various neurologists, like Holmes, have commented that White’s traumatic brain injury caused her partial complex seizures and hallucinations, and as a result she was cataleptic and hysterical. They suggest that her visions were actually hallucinations and delusions during non-motor seizures which led her to believe that she had visions of God.⁷⁷

As we have seen, experiments by Persinger [8.1], using transcranial magnetic stimulators showed that one could produce these kinds of effects in subjects with no history of temporal lobe seizures. One researcher who stimulated his own temporal lobes, reported being amazed at having the experience of God for the first time in his life. As may be expected, while some people have taken this brain area to be the seat of a special human faculty for experiencing the divine, others see it as confirmation that such religious experiences are delusions caused by electrical disturbances in the brain.

At the University of California in San Diego, neuroscientist **VS Ramachandran** noticed that a disproportionate number of patients, about a quarter, with temporal lobe epilepsy, reported having deeply moving religious experiences. He discusses his research on the neural basis of religious experience in the same way as he does his work with people who feel phantom limbs or who see cartoon characters in a visual blind spot.⁷⁸ This leads us to the question: Did God create the brain, or did the brain create God?

[8.3 RELIGION IS MORE THAN MEDITATION.]

8.4 DOWNSIDE OF MEDITATION. The history of the meeting between western science and eastern meditation has not always been smooth. In a sense, the whole process is like a lotus rising from the mud of false and weak systems, a veritable evolutionary process of the survival of the fittest system by scientific selection.⁷⁹ By the mid-1970s, clinical reports of negative outcomes of various mantra meditation programs began to appear in the psychiatric literature.⁸⁰ These included people becoming unemployable because they were unable to control their mental states (eg everything around them seemed unreal), and more serious problems ranging from depression and agitation to psychosis.

Leon Otis, a psychologist at Stanford Research Institute, found that adverse outcomes were related to how long that person had meditated using such methods.⁸¹ **Michael Persinger**, neuroscientist at the Laurentian Uni-

⁷⁶ Gregory Holmes & Delbert Hodder, “Ellen G White and the Seventh Day Adventist Church: Visions or Partial Complex Seizures?” *Journal of Neurology* 31,4 1981:160-161.

⁷⁷ **EL Altshuler**, “Did Ezekiel have temporal lobe epilepsy.” *Archives of General Psychiatry* 59,6 2002:561-652. **AW Beard**, “The schizophrenia-like psychosis of epilepsy: Physical aspects.” *The Journal of Psychiatry* 109 1963:113-129. **R Dewhust & A Beard**, “Sudden religious conversions in temporal lobe epilepsy. *Epilepsy and Behavior* 4,1 2003:78-87. **BK Puri**, “SPECT neuroimaging in schizophrenia with religious delusions.” *International Journal of Psychophysiology* 40,2 2001:143-148. **J Wuerfel**, “Religion is associated with hippocampal but not amygdala volumes in patients with refractory epilepsy.” *Journal of Neurology, Neuropsychiatry, and Neurosurgery*, 75,4k 2004:640-642.

⁷⁸ See Ramachandran & Blakeslee 1998.

⁷⁹ This section is mostly based on <http://www.ex-premie.org/pages/ismeditation.htm>.

⁸⁰ Clinical reports of negative outcomes. AP French, AC Schmid and E Ingalls, “Transcendental Meditation, Altered reality testing, and behavioral change: A case report,” *Journal of Nervous and Mental Disease* 161 1975:55-58; RB Kennedy, “Self-induced depersonalisation syndrome,” *American Journal of Psychiatry* 133, 1976:1326-1328; AA Lazarus, “Psychiatric problems precipitated by Transcendental Meditation,” *Psychological Reports* 39 1976:601-602.

⁸¹ N Mead, “Why meditation may not reduce stress,” *Natural Health* 23,6 Nov-Dec 1993: 80-85. LS Otis, “Adverse effects of transcendental meditation” in D Shapiro & R Walsh (eds), *Meditation: Classic and Contemporaneous*

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versity, Sudbury, Ontario, Canada, found that for some people, meditation can bring on symptoms of complex partial epilepsy, such as visual abnormalities, hearing voices, feeling vibrations, or experiencing automatic behaviors.⁸² Another concern, explored by Esalen founders, **Michael Murphy**⁸³ and **Steven Donovan**,⁸⁴ was that advanced practitioners of mantra meditation ranked high in suggestibility,⁸⁵ not surprising given its similarity to self-hypnosis.

A number of people in the US have successfully brought legal suits for damages suffered as a result of their participation in meditation programmes, especially commercialized methods such as TM (“transcendental meditation”).⁸⁶ Many such people suffered from problems and difficulties regarding thinking and attention. Other impairments included emotional difficulties, blackouts, anxiety, “spacing out” [feeling drowsy, weak, and bored], amnesia, and losing track of time.⁸⁷

This is not to say that everyone who meditates has had these difficulties. Many find brief meditation sessions relaxing, but these people are usually not part of groups which influence or induce them into continuing, regardless of their own feelings or experiences. The problem arises when meditation is claimed to be universally “good for mankind” and can be applied to anyone.

In those early years in the US, two approaches were common. The first was the empty-mind mantra meditation based on the Hindu tradition, which many had found useful. The second, from the Judaeo-Christian tradition, is reflective meditation, where you reflect as a way of focusing. In the former, a close relationship between teacher and pupil included attention to individual differences and any problems which might arise. In contrast to earlier approaches, meditation today is often being sold by mass marketing, and often by individuals who have no religious affiliation or do not declare it.⁸⁸

As early as 1967, when **the Divine Light Mission** arrived in the US, it used “meditation” as a marketing strategy. By the 1980s, numbers dropped off due to disillusionment, and its guru Maharaji (Prem Rawat) renounced its Asian trappings and changed the cult’s name to Elan Vital, and went on to seek new converts in third world countries such as Nigeria. Many more productive lives were destroyed as a result.

In the 1980s, Swami Muktananda, a respected meditation guru and avowed celibate of **the Siddha Yoga cult**, was accused of regularly having sex with his teenaged disciples.⁸⁹ Around the same time, Richard Baker,

Perspectives, New York: Alden, 1984; DS Holmes, “Meditation and somatic arousal reduction,” *American Psychologist* 39 1984:1-10.

⁸² Michael A Persinger, “Transcendental Meditation and general meditation are associated with enhanced complex partial epileptic-like signs: Evidence of ‘cognitive kindling’?” *Perceptual and Motor Skills* 76, 1993:80-82; MA Persinger, “Enhanced incidence of ‘The sensed presence’ in people who have learned to meditate: Support for the right hemispheric intrusion hypothesis,” *Perceptual and Motor Skills* 75, 1992:1308-1310; MA Persinger & K Makarec, “Temporal lobe epileptic signs and correlative behaviors displayed by normal populations,” *Journal of General Psychology* 114,2, 1987:179-195.

⁸³ **The Esalen Institute**, Big Sur, California, founded by Michael Murphy and Dick Price in 1962, is a center for humanistic alternative education, a nonprofit organization devoted to multidisciplinary studies ordinarily neglected by traditional academia.

⁸⁴ Entrepreneur & consultant, President of the Esalen Institute, 1985 to 1993.

⁸⁵ Michael Murphy & Steve Donovan, *The Physical and Psychological Effects of Meditation*, Big Sur, CA: Esalen Institute, 1989.

⁸⁶ Legal suits for damages. John Doe I-VI and Jane Doe vs Maharishi Mahesh Yogi; World Plan Executive Council-United States; Maharishi International University for the US District Court for the District of Columbia, 95-2848, 2849, 2851, 2852, 2853, 2854 (consolidated); Jane Green vs Maharishi Mahesh Yogi et al. US District Court for the District of Columbia, 87-0015-OG. Patrick Ryan vs World Plan Executive Council-United States et al. US District Court for the District of Columbia, 87-0016-OG. On the ineffectiveness and problems of TM, see A Lutz et al; 2007:41-43 & <http://onwww.net/trancenet.org/research/index.shtml#german>.

⁸⁷ Problems found in therapy. MT Singer & R Ofshe, “Thought reform and the production of psychiatric casualties,” *Psychiatric Annals* 20,4 1990:189-190.

⁸⁸ On various aspects of the commercialization of meditation and pseudoscientific claims, see eg Barry L Beyerstein, “Pseudoscience and the brain: Tuners and tonics for aspiring superhumans” at <http://www.sfu.ca/~beyerste/-research/articles/06Pseudoscience-and-Brain.pdf>.

⁸⁹ See open letter of an ex-follower, <http://leavingsiddhayoga.net/secret.htm>.

one of the foremost Zen teachers in the US, was forced to resign from his leadership of the San Francisco Zen Centre on charges of misuse of funds and having an affair with a married resident female student.⁹⁰

In the late 1980s, **Bhagwan Shree Rajneesh** (also called Osho), the self-proclaimed enlightened Indian sage, who owned thirty Rolls Royce, fled the US in the wake of an ugly controversy involving charges of blackmail and murder.⁹¹ In 1981, on arriving in the US he bought the 64,000-acre Big Muddy cattle ranch in eastern Oregon for US\$6 million, and named it Rajneeshpuram, which he headed as a virtual autocrat. He was renowned for molesting young girls and women to “feel their chakra,” and impregnated many of them. His own sannyasins (monastic followers) were known to poison those they perceived as a threat. Members of Rajneesh’s own staff were poisoned by his personal secretary, Ma Ananda Sheela, when she thought they knew too much or had simply fallen out of her favour.

To prevent such misconduct and issues, **the Western Vipassana teachers** formed their own ethics committee. The Insight Meditation Society (Barre, Massachusetts) and Spirit Rock Meditation Center, two of the leading meditation centres in the US, for example, have their own ethical code⁹² and ethics committee.⁹³ More importantly, in terms of conflict-resolution, the Spirit Rock Meditation Center also has an Ethics and Reconciliation Council (EAR).⁹⁴

In March 1993, a ten-day conference of Western Buddhist meditation teachers was held in Dharamsala in a hotel near the Namgyal Monastery, the residence of the Dalai Lama, who headed the conference, themed, “Toward a Western Buddhism.”⁹⁵ One of the most important issues discussed was that of Buddhist ethics and the Dalai Lama strongly emphasized the right, and even responsibility, of students to object to any behavior of teachers deemed abusive, damaging, immoral, or unsuitable for the time and place: “Make voice,” he insisted, “Give warning! We no longer tolerate!” The Dalai Lama encouraged repeated open criticism of such behaviour; if all else fails, he proposed, “Name names in newspapers!”

Sadly, in early 2006, another scandal arose in Tibetan Buddhism in the West, involving **Geshe Michael Roach**,⁹⁶ whose teachings and behavior are causing controversy and concern within much of the Buddhist community, due to his relationship with female student, Christie McNally and his unconventional teachings about Tibetan meditation practices, to the extent of his being rendered as persona non grata.⁹⁷

The lesson of such scandals and tragedies is basically due to unhealthy teacher-pupil relationship, mainly that of transference and counter-transference,⁹⁸ leading to the teacher’s exploitation of his pupils, and of blind obedience and of grandiose perception of the teacher on the pupils’ part. When the teacher is placed above the teaching, there is always the danger of the teacher being misperceived as being more than what he is, and the pupils of being abused by the teacher. Meditation only succeeds when one sits alone and rises above one’s senses to a higher stillness.

9 The Mind and Life Conferences

9.1 BEGINNINGS. One of the most important events contributing to the dialogue between mind science and Buddhist psychology is the Mind and Life conference series and their related activities (such as their follow-up reports and publications).⁹⁹ The Mind and Life dialogues between the Dalai Lama and Western scientists began with collaboration between two Buddhist practitioners, **R Adam Engle**, a North American businessman, and the late **Francisco J Varela**

⁹⁰ See Sandra Bell, “Scandals in emerging Western Buddhism,” in Prebish & Baumann (eds), 2002:235-238.

⁹¹ See Hugh Milne (Shivamurti), *The God that Failed*, NY: St Martin’s Press, 1987.

⁹² That of the Spirit Rock Meditation Centre is called “Teacher Code of Ethics,” based on the Five Precepts: <http://www.spiritrock.org/display.asp?pageid=20&catid=4>.

⁹³ http://www.dharma.org/ims/insight/2003_spring_insight_newsletter.pdf.

⁹⁴ <http://www.spiritrock.org/display.asp?pageid=7&catid=1>.

⁹⁵ <http://www.mandala.hr/5/6-surya.html>.

⁹⁶ See <http://www.diamond-cutter.org/>.

⁹⁷ This section onwards is from <http://www.diamond-cutter.org/geshe-michael-roach/geshe-michael-roach-vows.html>.

⁹⁸ In psychotherapy, “transference” is the displacement of feelings and attitudes applicable to other persons (usually one’s parents, spouse, siblings, etc) onto the analyst or teacher; while “countertransference” is the analyst’s or teacher’s displacement of affect (feelings) (ie transference) onto the client or pupil.

⁹⁹ This section is based on a history of the Mind and Life conferences: <http://www.mindandlife.org/history.html>.

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(1946-2001), a Chilean-born neuroscientist living and working in Paris. In 1983, both men independently took the initiative to create a series of cross-cultural meetings between the Dalai Lama and Western scientists.

9.2 **MIND AND LIFE I.** The task of the first Mind and Life conference was a very notoriously difficult one: to serve a bridge for mutual enrichment between traditional contemplative disciplines and modern life science. Fortunately (or unfortunately), Varela had had a first taste of these difficulties while helping to establish a science program at Naropa Institute, a liberal arts institution created by scandal-ridden Tibetan shaman and meditation master Chogyam Trungpa, as a meeting ground between Western traditions and contemplative studies.

Thus in 1987, wishing to avoid some of the pitfalls encountered during the Naropa experience, several operating principles were adopted that have contributed significantly to the success of the Mind and Life series. These include:

- Choosing open-minded and competent scientists who ideally have some familiarity with contemplative traditions
- Creating fully participatory meetings where His Holiness is briefed on general scientific background from a nonpartisan perspective before discussion is opened;
- Employing gifted translators like Thupten Jinpa, Alan Wallace, and Jose Cabezón, who are comfortable with scientific vocabulary in both Tibetan and English; and finally
- Creating a private, protected space where relaxed and spontaneous discussion can proceed away from the Western media's watchful eye.

The first Mind and Life Conference took place in October 1987 in Dharamsala, and was later published as *Gentle Bridges: Conversations with the Dalai Lama on the Sciences of Mind*.¹⁰⁰ The conference ocused on the basic groundwork of modern cognitive science.

9.4 **MIND AND LIFE II** was held in October 1989 in Newport Beach, California, with Robert Livingston as the scientific coordinator. The conference focused on neuroscience and the mind/body relationship. Coinciding fortuitously with the announcement of the award the Nobel Peace Prize to His Holiness, the two-day meeting was atypical for the Mind and Life Conferences both in its brevity and its Western venue. It has been published as *Consciousness at the Crossroads: Conversations with the Dalai Lama on Brain Science and Buddhism*.¹⁰¹

9.4 **MIND AND LIFE III** was held in Dharamsala, in 1990. Daniel Goleman served as the scientific coordinator for the meeting, which ocused on the relationship between emotions and health, and has been published as *Healing Emotions: Conversations with the Dalai Lama on Mindfulness, Emotions, and Health*.¹⁰² A new mode of exploration emerged: participants initiated a research project to investigate the neurobiological effects of meditation on long-term meditators. To facilitate such research, the Mind and Life network was created to connect other scientists interested in both Eastern contemplative experience and Western science. With seed money from the Hershey Family Foundation, **the Mind and Life Institute** was born in 1990. The Fetzer Institute funded two years of network expenses and the initial stages of the research project. Research continues on various topics such as attention and emotional response.

9.5 **MIND AND LIFE IV** was held in Dharamsala, in October 1992, with Francisco Varela again acting as scientific coordinator. The dialogue ocused on the areas of sleep, dreams, and the process of dying, and has been published as *Sleeping, Dreaming and Dying: An Exploration of Consciousness with the Dalai Lama*.¹⁰³

9.6 **MIND AND LIFE V** was held in Dharamsala in October 1995. The topic was altruism, ethics, and compassion, with Richard Davidson as the scientific coordinator. The dialogue has been published by Oxford University Press as *Visions of Compassion: Western Scientists and Tibetan Buddhists Examine Human Nature*.¹⁰⁴

9.7 **MIND AND LIFE VI** opened a new area of exploration beyond the previous focus on life science, moving into the new physics and cosmology. The meeting took place in Dharamsala in October 1997, with Arthur Zajonc as the scientific coordinator. The dialogue has been published as *The New Physics and Cosmology: Dialogues with the Dalai Lama*.¹⁰⁵

9.8 **MIND AND LIFE VII** At the invitation of Anton Zeilinger, a participant in Mind and Life VI, the dialogue on quantum physics that had begun in Dharamsala was continued at a smaller meeting, Mind and Life VII, held at the Institut für Experimentalphysik in Innsbruck, Austria, in June 1998. That meeting has been described in the cover story of the January 1999 issue of GEO magazine of Germany.

¹⁰⁰ Boston & London: Shambhala, 1992.

¹⁰¹ NY: Snow Lion, 1999.

¹⁰² Boston & London: Shambhala, 1997.

¹⁰³ Boston: Wisdom, 1997.

¹⁰⁴ NY: Oxford University Press, 2001.

¹⁰⁵ NY: Oxford University Press, 2004.

9.9 **MIND AND LIFE VIII** was held in Dharamsala in March 2000. The topic was destructive emotions with Daniel Goleman as the scientific coordinator. The dialogue is published in *Destructive Emotions: How can we overcome them? A scientific dialogue with the Dalai Lama*.¹⁰⁶

9.10 **MIND AND LIFE IX** was a two-day meeting held in Madison, Wisconsin in May 2001, and was organized in conjunction with the HealthEmotions Research Institute and the Center for Research on Mind-Body Interactions at the University of Wisconsin, Madison, with Richard Davidson as the scientific coordinator. Participants presented an overview of modern methods for investigating human brain function and discussed with His Holiness the application of these methods in new research aimed at understanding the changes produced by meditation practice.

9.11 **MIND AND LIFE X** was held from 20 September to 4 October, 2002, in Dharamsala, coordinated by Arthur Zajonc. At the outset of his famous 1943 lectures “What is Life?,” the physicist Erwin Schrödinger posed the question, “Can that which takes place inside a living organism be accounted for by physics and chemistry?” Mind and Life X again explored this perennial question concerning the nature of life and its relationship to matter, but within a broader and modern context, through physics, chemistry, and biology.

9.12 **MIND AND LIFE XI**, themed “Investigating the Mind: Exchanges between Buddhism and Biobehavioral Science,” was held on 13-14 September 2003 in the MIT’s Kresge Auditorium in Cambridge, Massachusetts. The underlying conference question was: “Can western science, in the pursuit of its own research, make use of Buddhism’s 2,500 years of investigating the mind?” Up to now, science had been skeptical of this course of investigation because of its subjectivity—the use of the mind to investigate itself. Today, however, especially with the development of new technology, the biobehavioral sciences (neuroscience, cognitive science, psychology, biomedicine) are in the process of extending their methods in search of ever bolder approaches to studying the workings of the human mind.

9.13 **MIND AND LIFE XII**, themed “Neuroplasticity: The Neuronal Substrates of Learning and Transformation,” and coordinated by Richard Davidson, was held on 18-22 October, 2004, at Dharamsala. Here is the conference overview.

Neuroplasticity: Transforming the Mind by Changing the Brain. Neuroplasticity refers to structural and functional changes in the brain that are brought about by training and experience. The brain is the organ that is designed to change in response to experience. Neuroscience and psychological research over the past decade on this topic has burgeoned and is leading to new insights about the many ways in which the brain, behavior and experience change in response to experience. This basic issue is being studied at many different levels, in different species, and on different time scales. Yet all of the work invariably leads to the conclusion that the brain is not static but rather is dynamically changing and undergoes such changes throughout one’s entire life. The scientists assembled for this meeting represent the various levels of analysis in which these questions are being pursued. Research on structural plasticity will reveal how the literal composition of the adult mammalian brain is constantly changing and will show the factors that influence these changes.

9.14 **MIND AND LIFE XIII**, themed “Investigating the Mind: The Science and Clinical Applications of Meditation,” was held on 8-10 November 2005 at the DAR Constitution Hall, Washington DC. This conference addressed the growing interest in meditation within modern medicine and biomedical science that has arisen over the past thirty years and further explored the emerging clinical opportunities. In addition, an annual, week-long Mind and Life Summer Research Institute was started to advance the field of the scientific study of meditation, and a number of studies have also been initiated by participants in that program.¹⁰⁷

Meditation is becoming mainstream in Western medicine and society. Applications of meditation are now common in the treatment of stress, pain, and a range of chronic diseases in both medicine and psychiatry, and some approaches are currently the subject of NIH¹⁰⁸-supported clinical trials and research studies. At the same time, the power of our non-invasive technologies have made it possible to investigate the nature of cognition and emotion in the brain as never before, and to begin to explore the interfaces between mind, brain, and body, and the implications of particular forms of meditative practices for modulating and regulating biological pathways to restore or enhance homeostatic processes and perhaps extend the reach of both mind and body in ways that might potentially promote rehabilitation and healing as well as greater overall health and well-being.

9.15 **FUTURE PROGRAMMES.** In 2006, the Mind and Life Institute sponsored several meetings to continue the important work of creating and maintaining healthy minds:

- April - Mind and Life XIV, with the Dalai Lama in India.
- June - Summer Research Institute in Garrison, NY, USA.
- September - Public Talk by the Dalai Lama in Denver, CO, USA.
- November - Mind and Life XV with the Dalai Lama in Japan.

¹⁰⁶ NY: Bantam Dell, 2003.

¹⁰⁷ See <http://mindandlife.org/sri06.ml.summer.institute.html> for 2006, and navigate for other years’ institutes.

¹⁰⁸ National Institute of Health.

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Additionally, Mind and Life¹⁰⁹ is facilitating a major initiative in the field of Mindfulness in Education. The goal of this initiative is to develop practical tools for everyday use in our schools that foster mindfulness in our youth.

10 Closing remarks

10.1 BUDDHIST IDEALS AND MODELS. Compared to the other world religions, especially the God-centred ones (namely, Judaism, Christianity and Islam), Buddhism allows a wide latitude as to how it is defined and who defines it. In the God-centred systems, a religious individual, council, or community is, as a rule, defined by their avowed “confession of faith,” that is, a set of dogmas that sets one group apart from others. Naturally, such a system would be markedly sectarian, with very restricted or controlled exchange between confessional groups.

Although Buddhism has a huge collection of scripture and commentaries, much bigger than all the scripture of the God-centred religions put together, it is not a religion of the book. Although scripture, such as the early Suttas, provide an almost incontrovertible source of authenticating the Buddhist life, principles and goal, each Buddhist school, group, indeed, individual, is free to interpret it according to his conscience and wisdom. With a high literacy rate and the freer flow of information today through various mass and electronic media, the individual is truly free to decide or define what kind of Buddhism he wants.

Of course, this has not always been the case. Throughout Buddhist history, different types of individuals have been perceived as **religious virtuosi** or “religious specialists,” that is, those who are perceived as having a vital grasp of Buddhist doctrine and spirit by sheer personality and social status.

[On the 5 Buddhist ideals or models: see Ch 2.37.]

10.2 THE COST OF PROGRESS. From the four-period scheme of Buddhist history, we can see a growing tendency towards **secularism**, spirally downwards from the ideal of the spiritually liberated arhat, to the socially engaged bodhisattva (and the Buddhist philosopher), to the unconventional siddha of shamanistic Buddhism, and to the contemporary entrepreneurial Buddhist of corporate Buddhism. Secularism here refers to a socio-religious attitude where there is less emphasis on inner spirituality for oneself, but a greater perception that to be religious is to be engaged with the world.¹¹⁰

The arhat ideal has generally fallen out of favour in some circles for one simple but important reason: the difficulty of meditating, or more exactly, of not attaining dhyana. When Dharma as living *word*¹¹¹ became silent *scripture*—when spoken communication of spirituality came to be written down in dead letters, the Dharma in due course came to be regarded by many as a measurable commodity. The holy has become an external object, embodied in, say, a Buddha “relic” or a portable pantheon.¹¹² The power that was spiritually internal has been externalized or reified (made into an object). But once such power is invested in an external thing, whoever possesses the object would be perceived as possessing that power, too. In short, this is *priestcraft*. This is diametrically opposite of one being one’s own refuge, when spirituality is internalized, that is, the locus of control is within oneself.

Who or what is the **seth** of this new millennium? Could it be the psychotherapist, the modern shaman? One significant fact of the current dialogue between Buddhist psychology and academic mind science is clear: what early Buddhism sees as immeasurable, timeless, and a personal experience, namely, *the meditative experience*, is made into measurable scientific data, externalized so that scientists and experts can work and mull over them.

Buddhist psychology—by which I mean *Buddhist principles of mind-training and meditation*—is opening a new field of knowledge for the scientists. Knowledge is power. Power is very attractive because we can do things with them or make others do things for us. And if power can be put into little packages, they would sell

¹⁰⁹ <http://www.mindandlife.org/>. The current address is: **The Mind & Life Institute**, 589 West Street, Louisville, CO 80027. Phone: 720-891-4292. Fax: 303-665-5597. Email to Mind & Life Institute

¹¹⁰ See esp **Upāya S** (S 22.53/3:53 f) = SD 29.4. This is not a criticism of socially-engaged Buddhism, which is basically compassion and wisdom put into action with a distinction of self or other, or regarding other as self. What is meant here is a worldly and self-centred clinging to the world due to one’s sense of lack.

¹¹¹ In the sense of voice (*vacana*), as in *Buddha, vacana*.

¹¹² Eg the Buddha’s “Tooth Relic” in Sri Lanka and the “Emerald Buddha” of Thailand. See esp Piya Tan, *History of Buddhism*, rev 2005: Spread §10 (Relics rule).

very well, like high-powered batteries, or even weapons of crowd control. They are called *books*. Over the last two decades, there is a sudden and phenomenal explosion of Buddhist books, especially on meditation or meditation-related topics. Most of these books—expounding what might be called “**vague Buddhism**”—are written by non-practitioners, or by those lacking any deep understanding of Buddhism, or even by non-Buddhists. And they sell well—for, it’s in *the name*—but mostly it is a case of the blind reading the blind.¹¹³

10.3 WILL SCIENCE INVALIDATE BUDDHISM? Earlier on [5], we spoke of the “psychologization of Buddhism,” that is, on the impact that science would have on Buddhism today. At least one budding scholar, **Jeff D Walker**,¹¹⁴ has shown a special interest in “The interface of Buddhism and science: Will it alter a tradition?”¹¹⁵ he thinks that it is likely that such a collaboration

may lead to the invalidation of foundational beliefs of one of the traditions. However, if approached with careful attention and wholesome motivation, the interface of Buddhism and science presents an opportunity to progress toward a healthier society and a deeper understanding of human experience. (Walker 2006:1)

Walker first notes that like any religion that has left its point of origin—“there comes a point where we can say that, that which has dispersed has been removed from its original context...the ideas of Buddhism shaped the people, and the people shaped the ideas of Buddhism” (id).

In the late 19th century, cultural currency of science in the West led people to question the prevailing authority of Christianity. Buddhist evangelists such as Anagarika Dharmapala capitalized on this, declaring at the 1893 Parliament of World Religions in Chicago, that “it was Buddhism, not Christianity, that could heal the rift between Science in religion.”¹¹⁶ [2]. Such events not only planted the seeds of Buddhism in the West, but also acted as a precedent for an interdisciplinary dialogue between Buddhism and science. Walker quotes a contemporary Tibetan scholar, **Thubten Jinpa**,¹¹⁷ who explains the current argument for such collaboration, first Buddhism’s encountering the physical sciences, and in recent years, engaging with the mind sciences:

The following key features of Buddhism—its suspicion of any notion of absolutes, its insistence on belief based on understanding, its empiricist philosophical orientation, its minute analysis of the nature of mind and its various modalities, and its overwhelming emphasis on knowledge gained through personal experience—all make it easy for Buddhism to be in a dialogue with a system of thought that emphasizes empirical evidence as the key means of acquiring knowledge. (Jinpa 2003:83)

Even in India, a few centuries after the Buddha’s death, Buddhism began to develop new ideas (such as cosmic Buddhas and Bodhisattvas, and the downplaying of the arhat ideal), and more dramatic developments set it as Buddhism spread across Asia, changing nations and in turn changed by them. And now interfacing with science, Buddhism is further experiencing a renewed decontextualization.

There is the problem of authenticating one’s religion. Unlike in the past when saints were seen to walk the earth, this is not so today. One of the most important observations that Walker makes, I think, is when he says:

Lacking such examples, the Western world turns to the authority of science to validate Buddhist practices. Superficially it may seem as though science is the dominant tradition, and, in order to be recognized as legitimate, Buddhism must have a scientific seal of approval. However, to understand the situation in its entirety one must examine intentions of the researchers, as well as context of the researcher. (Walker 2006:5)

¹¹³ Even successful writers on psychology and meditation such as Daniel Goleman have been accused of making unfounded, even false, claims, such as his ideas about “emotional intelligence.” For refs, See.

¹¹⁴ Wesleyan University, 2006. Walker is a neuroscience and religion double major student, and member of the class of 2008, from Wesleyan University, Middletown, CT, USA, who plans to pursue an advanced degree in cognitive neuroscience: see <http://www.wesleyan.edu/psyc/mindmatters/editors.html>.

¹¹⁵ See biblio: http://www.wesleyan.edu/aai/2006_summer_papers/jwalker.html.

¹¹⁶ Fields 1981:126.

¹¹⁷ He is a renowned scholar with a PhD in religious studies from Cambridge, and since 1985 has been a principal English translator to the Dalai Lama and has traveled extensively in this capacity.

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To understand the nature of consciousness is to understand how the mind works, but more importantly for practitioners, it reminds us of the immeasurable capacity of the mind for goodness—and for evil. If we do not consciously choose to direct the mind towards good, we would, as a rule, be autopiloted by our past consciousness, living in the past, perceiving others as shadows of our past, and intoxicated by the future, measuring others by how much they are worth to us. Yet life's answer and liberation lies in the present moment: the life lived now is well lived. For it is consciousness at its best. [END]

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